ROLAND RSS S-1608/0816 COMPACT DIGITAL SNAKE

Roland's Digital Snake now comes in a slimline alternative.

Text: Simon Allen

▶ How many times have you been left packing up at the end of a concert or a session – usually on your lonesome – while everyone else is at home with a beer and their feet up? Ever found yourself wondering: 'there must be an easier way'?

Digital mixing and audio processing is already reducing the volume, size, and weight of audio equipment, and Roland (well, strictly speaking, 'RSS by Roland') has already weighed in with its S-4000 Digital Snake – making Ethernet-based multi-channel digital audio transmission more affordable than ever. It's now released the S-1608/0816 combo, which puts the technology in reach of even *more* people. It's a digital multicore – not a digital mixing system that uses a digital multicore – so the Compact Digital Snake can drop into just about any existing setup.

SNAKE'S ALIVE

The review rig consisted of the S-1608 and S-0816 rack-mountable units and the S-4000R remote controller. The S-1608 is situated on the stage (or at the point of input) and the S-0816 is placed at the 'mixing' or 'front of house' position. These two units are then simply connected via a single Ethernet Cat5e cable. This cable carries the audio and control signals using Roland's own protocol, REAC (Roland Ethernet Audio Communication – at 24-bit/96k). Meanwhile, the S-4000R remote control oversees the channel gains and monitoring of the audio signals and can be patched into the system at either the mixer or on-stage ends of the chain. It features channel select and channel gain knobs, recall/store and lock functions, channel pad (-20dB) and phantom power options. It also gives you a 'signal' LED and 'clip' LED for each channel, and a standard input signal level meter for the selected channel. The remote works on a standard RS-232C interface while the S-1608 and the S-0816 run on mains power.

There are a total of 16 input channels and eight output/return channels on the snake, and with the addition of any number of S-0816 units, Cat5e cables, and an Ethernet switching hub, you can split the 16 channels to multiple destinations such as a multitrack recorder or a monitor desk. Between the Neutrik Ethercon devices the system has a very low latency of approximately 375 microseconds while any additional switching hub will add around 200 microseconds of latency. The technical restrictions of the cable itself also limit individual runs to no more than 100 metres, though this should be more than enough for most applications. Where further cable distance is required, an in-line ethernet switching hub every 100 metres can be used to carry and boost the signal up to a total of 500 metres. Of course, the beauty of this arrangement is that, provided there are no digital errors or interference, there's no loss in signal quality over long distances – unlike analogue snakes.

IN THE SNAKE PIT

The new Roland system is easy to install, and for anyone used to lugging analogue copper cables about, laying the Cat5e cable is a breeze. At the first test venue I effortlessly ran the cable down the side of the room, connected the 'stage' and 'front of house' boxes, powered up and was ready to go. The two units sync themselves very quickly without any manual input. The only 'extras' you need is a short XLR loom to connect the mixing desk to the S-0816 'front of house' unit. Plug in the remote and you're ready for soundcheck.

I was pleased to see that Roland has included AC power cord clamps on the side of both boxes to prevent the power being accidentally cut to either unit – this would result in complete loss of communication. The Ethernet cables also sport a much more solid REAC connector rather than the standard RJ45 plugs. This offers some consolation for anyone switching from analogue to digital cables for the first time, who might feel unnerved by the 'lightweight' nature of digital cables and connectors. Combine this with the option of rack-mounting the units, and the result is a very secure and robust-looking system that's suitable for a wide variety of gigging and concert environments.

SSSS... OUNDCHECK

Soundchecking the new system at my first test gig was also a relatively painless affair. Selecting a channel, setting the gain, adding a pad, or supplying phantom power to a mic is all relatively simple (more on that in a moment). The S-1608 and the S-0816 each have a 'global' mute button – great for when you've got limited time for soundcheck. This allows you to quickly and easily mute the entire system *before* plugging or unplugging mic cables etc, preventing the need for the mandatory run back

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The S-4000R optional remote – well worth the extra dosh.

to the desk to check on a channel's status – more looms should have this feature. As previously mentioned, the system remote also connects at either end of the system. So in a typical stage/FOH configuration, you can initially monitor the channel levels at the stage (for instance) before unplugging the remote and adjourning to front-of-house. You can also opt for a second remote if you wish to permanently locate one at either end. In this dual-remote configuration, when one is being used the other will lock to prevent two people 'fighting' over the controls. This is a great concept.

REMOTE BEAUTY

The remote control also allows you to save presets of gain, phantom power and pad settings. This is where any digital audio equipment really comes into its own, of course. Working at a concert involving several different acts or wherever the stage setup changes, presets can be used to save all your settings from the soundcheck. Being able to recall these settings later during the show is extremely useful and efficient.

One difficulty I had with the system, however, involved altering the gains on individual channels. To do this you must first select the channel you want to adjust using the rotary Channel Select knob, which is quite fiddly. I'd much prefer to see a gain control on each channel – wouldn't we all? Altering gain structures mid-gig became particularly difficult in the dark, as the numbers on the display of the remote aren't visible, only the selected channel number is illuminated. What this perhaps suggests is that these Digital Snakes are ideally suited to situations involving a digital desk, where the gain for each preamp is integrated within the console itself. Alternatively, gains can be selected and modified via the free software that displays 40 inputs on-screen, which I unfortunately didn't have for the review.

The stage box (S-1608) features LED indicators on all the channels. There are three: signal level, clip indicators, and +48V phantom power. This is a very useful feature as it allows the stage crew (etc) to easily see what's going on. When changing sets during a concert, for example, they're able to see whether phantom has been powered off on the right channels *before* switching input devices. If you had another remote on the stage and FOH has either forgotten or simply made the wrong changes, the stage crew could fix the mistake themselves.

CLASS ACT

As far as the sound quality goes, I'm really pleased to report that it's superb. There wasn't a great deal of difference between the sound of the analogue multicore and the Digital Snake; the signal from the Digital Snake had slightly more clarity in the top end and there was no sign of any analogue hum. The biggest advantage of the Digital Snake is the fact that the preamps are at the stage end, closer to the microphones. This means the signal is at its optimum before it's transferred to the desk.

I also wanted to hear how the system reacted to being driven 'into the red' – let's face it, you'll always go into the red at some point. Digital clipping is never going to sound desirable, but some A/Ds can be particularly harsh in the way they limit 'Over' signals. The RSS system sounds very 'analogue' in this respect, which was definitely a good thing. If you do have a channel clipping, the remote will tell you straight away via a red LED.

TIP THE SCALES

Before I conclude this review, I'd like to reiterate where this product really comes into its own. For full-time in-house installations, the Digital Snake will be particularly effective, especially if you also use a digital console. It will also be ideally suited to anywhere that you might need to transfer audio signals over a long distance or your installation doesn't permit a large heavy cable. The digital signal transfer of audio over large distances is a far better solution to using analogue multicore as there's no signal loss.

If you're looking for a system to take on the road then the Compact Digital Snake has a lot going for it. With only three portable boxes and lightweight cable to lug, it's a low-profile, high-quality, robust solution. It would also suit outside broadcast trucks, as the 'FOH' S-0816 unit can stay mounted in the truck and the crew can lay out the Ethernet cable and connect up the S-1608 in a matter of seconds. With a bit of imagination you can split the Digital Snake's output to as many S-0816 units as you like (with additional switching hubs), allowing you to run independent devices such as multitrack recording, broadcasting, or a monitor console, with each output being completely independent of the rest and with no loss in the signal every time it's split.

COME SLITHER

I think it's safe to say that the Roland RSS Compact Digital Snake is easier to set up than I first expected, although, if you're going to upgrade to a digital snake you'd do well to consider upgrading to a digital desk at the same time, to reap all the benefits the digital system offers. This is a really great product; a well built, easy to use, and reliable piece of kit. ■

NEED TO KNOW

Price
S-1608: $2795; S-0816: $2495; $4995 for the S-1608/0816 bundle (cable optional extra); S-4000R (optional remote): $695.

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Pros
Easy to configure.
Sounds great.
Low latency.
No induced noise/hums.
Excellent preamps.
Useful remote.

Cons
Gain control is fiddly, especially in a dark venue.

Summary
The Digital Snake is an affordable option that's well suited to a wide variety of applications. It's a doddle to install and a breeze to carry around. If there's one product the digital age has replaced that surely no-one would bemoan the loss of, it's the backbreaking heavy analogue cables we all used to lug around!